



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/749,396

01/02/2004

Takeshi Yamamoto

247209US2

2864

22850

7590

03/21/2005

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

CHEN, WEN YING PATTY

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/749,396

Applicant(s)

YAMAMOTO, TAKESHI

Examiner

Wen-Ying P. Chen

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Manabe et al. (US 6570639).

With respect to claims 1-4: Manabe et al. disclose in Figure 1A a liquid crystal display apparatus configured to have a liquid crystal layer interposed between a first substrate (element 11) and a second substrate (element 21), characterized by comprising: a plurality of pixels which are disposed in a matrix in a display region (element 40) that displays an image, the pixels including a first pixel with a first gap for interposition of the liquid crystal layer (region defined by element LQ) between the first substrate and the second substrate, and a second pixel with a second gap (region enclosed by element SP and element 31) that is smaller than the first gap; and a columnar spacer (element 31) for creating the second gap, the columnar spacer being disposed not at the first pixel but at the second pixel (element 31 on top of element 24B). Manabe et al. also disclose that the columnar spacer is formed of a photosensitive resin material, which has light shield properties and that the display apparatus further comprising a light shield layer that is disposed in a picture-frame shape along a peripheral edge of the display region (Abstract), the

Art Unit: 2871

columnar spacer and the light shield layer being formed of the same material (column 5, lines 28-38)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 5-6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manabe et al. (US 6510639) in view of Nishida et al. (US 6842207).

With respect to claims 5-6 and 9: Manabe et al. disclose all the limitations of the liquid crystal display apparatus set forth in claim 1. Manabe et al. further disclose the columnar spacer being disposed over the second color filter layer (element 31 on top of element 24B) and that the first substrate includes scan lines disposed in a row direction, signal lines disposed in a column direction, switching elements disposed near intersections of the scan lines and the signal lines,

Art Unit: 2871

and pixel electrode that are connected to the switching elements and are disposed in a matrix (column 4, lines 30-37), but Manabe et al. do not disclose the color filter layer being of different thickness and that the light wavelengths passed by the color filters are of different wavelengths. However, Nishida et al. disclose in Figure 13a a first color filter layer (element 7) that has a first film thickness and mainly passes first color light, a second color filter (element 8) that has a second film thickness, which is greater than the first film thickness (column 18, lines 33-35), and mainly passes second color light and that the first color light has a wavelength that is greater than a wavelength of the second color light (column 12, lines 15-17). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the color filter layer disclose by Nishida et al. into the display apparatus disclose by Manabe et al. so that a very good display which does not exhibit any coloring in whichever direction it is viewed may be obtained, as taught by Nishida et al. (Abstract).

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manabe et al. (US 6510639) in view of Huh et al. (US 2003/0218703).

With respect to claim 7: Manabe et al. disclose all the limitations of the liquid crystal display apparatus set forth in claim 1, but do not disclose a third pixel with a third gap. However, Huh et al. disclose in Figure 5 a plurality of pixels, which include a third pixel with a third gap (region defined by element 330 and element 91) that is smaller than the second gap (region defined by element 320 and element 91). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the pixel configuration

Art Unit: 2871

disclose by Huh et al. into the display apparatus disclose by Manabe et al. so that the different gaps reduce color shift according to gradation as taught by Huh et al. (page 5).

As to claim 8: Manabe et al. disclose all the limitations of the liquid crystal display apparatus set forth in claim 1, but do not disclose a third pixel with a third gap. However, Huh et al. disclose in Figure 5 a plurality of pixels, which include a third pixel with a third gap (region defined by element 310 and element 91) that is greater than the first gap (region defined by element 320 and element 91). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the pixel configuration disclose by Huh et al. into the display apparatus disclose by Manabe et al. so that the different size gaps reduce color shift according to gradation as taught by Huh et al. (page 5).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen-Ying P. Chen whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.

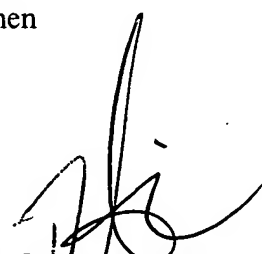
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2871

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wen-Ying P Chen
Examiner
Art Unit 2871

wpc



ROBERT H. KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800